

TOWARD A DYNAMIC SEMANTIC THEORY

Zdenek F. Oliverius

Monash University

(Received March, 1972)

The purpose of this paper is to present the outlines of semantic description that is dynamic insofar as it enables us to account for novel combinations of lexical items in sentences as well as for old and usual ones. Before I proceed to sketch the proposed organization of sentence generation and interpretation from the point of view of semantics I wish to discuss briefly some problems raised in one or two of the more recent attempts to stake out the domain of a semantic theory (Katz and Fodor 1964; Chomsky 1965; Weinreich 1966). In contrast to semantic theories proposed so far this paper pleads that the whole problem can be viewed as that of looking for a minimal set of abstract semantic items and dynamic rules allowing for modification of meaning in certain contexts or situations.

THEORETICAL PRELIMINARIES

There is no more striking general fact about language than the contrariety between the finite means of communication (words, syntactic patterns etc.) and the (practically) infinite number of possible messages. A native speaker's mastery of his language exhibits itself in his ability to produce and interpret previously encountered sentences as well as entirely novel ones. In order to refer to a practically infinite number of entities, qualities, actions etc. a communicative system needs either an infinite number of very specific items (monosemantic words or 'senses' of polysemantic words) linked through one-to-one correspondences to extralinguistic entities, qualities etc., or a rather limited finite set of more general items with a provision to modify their meaning according to the needs of each particular usage. The first-mentioned solution to the problem of infinite messages reflecting different types of referential semantic theories seems to have been rather attractive to a great many theorists, including Katz and Fodor (1964). While rejecting the theory of setting selections based on the 'full socio-physical environment of the utterance' (1964:488) as impossible in principle, they accept as reasonably adequate and discuss in detail the weak version of a theory of setting selection in which 'the setting of an occurrence of a sentence is construed as the written or spoken discourse of which the occurrence is a part' (1964:490). A semantic theory in this conception contains two components: a dictionary of the lexical items of the language and a system of projection rules.

Such a version of a semantic theory interprets discourse as would 'a fluent speaker afflicted with amnesia for non-linguistic facts but not with aphasia' (Katz and Fodor 1964: 490). This amounts to nothing less than building a fence dividing the speakers' and listeners' knowledge of their language from their knowledge of the world. This assumption of a wall which excludes the interlocutors' beliefs about matters of fact from the field of a semantic theory has far-reaching theoretical and practical implications. Shall we seriously assume that linguistic ability is divorced from our notions about the external world? While doing this programmatically, Katz and Fodor in practice depart from this assumption in their treatment of dictionary entries, understood as characterizations of every sense a lexical item can bear in any sentence (Katz and Fodor 1964: 493). And thus we witness a certain part of the interlocutors' knowledge of the world crossing the carefully built fence under the guise of grammatical and semantic markers and distinguishers characterizing dictionary entries. In the 'frozen pantomime' of traditional dictionaries each entry is treated as a list of more or less specific 'senses'. Notice that this is an attempt at the first-mentioned solution to the contrariety of finite means of communication and infinite number of messages, namely an attempt to provide the user of the language with a list of specific items. The list of items as presented in traditional dictionaries (or in Katz and Fodor's semantic theory, based to a considerable degree on traditional dictionary entries) is by necessity strictly limited. Any new usage of a word, not petrified in a dictionary entry, presents an insurmountable problem, or evokes new ad hoc additions of semantic markers and distinguishers.

The only other avenue that can reasonably be suggested as alternative is a dynamic theory based on a limited number of general items (words characterized by their *Gesamtbedeutung* only) and a set of semantic rules reflecting those used by native speakers in encoding and decoding sentences. A complete semantic theory of this kind is admittedly impossible, but a simplified version of it can become an approximative model capable of accounting for a number of new combinations in newly formed sentences or sentences heard for the first time. This kind of semantic theory thus makes possible a widening of perspective, encompassing step by step the global totality of human knowledge reflected in human speech.

Furthermore, to turn back to the question of contrariety of finite means of communication and the infinite number of messages, dynamic rules allow for meaningful interpretation of novel combinations of words, adding new specific meanings to the lists in dictionary entries

or in dichotomously subdivided trees as suggested by Katz and Fodor (1964:496, 500). Contrary to Katz and Fodor's theory, the dynamic theory proposed in this article is strong enough to account for the growing number and diversity of specific meanings in polysemantic words accompanying the social, economical and cultural development. The intricate problem of the relationship between polysemy and cultural progress is an old one (Breal 1897) but still it attracts the attention of modern linguists (Lorge 1949; Zipf 1945; 1949 Ullmann 1963). The number of specific meanings possessed by words seems to be a function of their frequency rank order. The implications of this relationship expressed by Zipf's formula $m = F^{\frac{1}{2}}$ (in which m denotes the number of specific meanings and F the relative frequency of the word) for the present investigation are these. The higher number of specific meanings is proportional to the wider range of different contexts in which the word occurs. On the other hand the high number of specific meanings is made possible by the widening of the general meaning (*Gesamtbedeutung*) of the word in question: if a word becomes applicable to a larger number of entities (qualities, actions etc.) it will convey less information of them than before. The relation between the quantity of items of a certain type and the generality of their meanings is one of inverse proportion: the infinite number of sentences, the relatively big number of lexemic invariants and the rather small number of morphemes correspond with very specific meanings of sentences, comparatively general meanings of words and very general and abstract meanings of morphemes.

In a natural communicative system such as language we do not and possibly cannot have a different word for everything; consequently words must take on several distinct functions. The purpose of an adequate semantic theory should be to characterize the invariant semantic items and semantic rules governing contextual modifications of the basic items. A simplified version of this kind of a semantic theory can become an approximative model capable of accounting for a number of new combinations in newly formed sentences or sentences heard for the first time. Such a dynamic semantic theory would make possible a widening of perspective encompassing step by step the global totality of human knowledge reflected in human speech.

THE ORGANISATION OF GENERATIVE SEMANTICS

Before discussing the internal structure of the proposed model of a semantic theory I wish to comment on the relation of semantics to other components of a natural communicative system. I cannot possibly agree more with the statement that 'it is quite apparent

that current theories of syntax and semantics are highly fragmentary and tentative, and that they involve open questions of a fundamental nature' (Chomsky 1965: 148). The treatment of semantics in some recent papers (Katz and Fodor 1964; Chomsky 1965; Bierwisch 1970) seem to be of exactly such a fragmentary and tentative nature. Although the question of the boundaries of syntax and semantics and their relative position within the whole system of a language is beyond the scope of the present discussion, it may nevertheless be useful to touch on it briefly. I should like to call attention to the fact that various theories of setting selection (Katz and Fodor 1964) or subcategorization and selectional rules (Chomsky 1965) tacitly or explicitly imply that the semantic representation of a sentence is derived from syntactic deep structure consisting of lexical elements endowed with syntactic features or grammatical markers. This amounts to nothing less than to suggesting a subordination of semantics to syntax. The subservient relation of semantics in theories of this kind has serious and far reaching implications for the descriptive and interpretative strength of the theory. These so called selection restrictions specifying the correct application of lexical elements are not very reliable. To say that 'thus father requires an animate subjective if it occurs as predicate noun' and suggest that 'this can be seen from the anomaly of sentences like This suitcase is Bill's father' (Bierwisch 1970) amounts to ignoring sentences like the wish is father to the thought (The Concise Oxford Dictionary of Current English) or a situation like that described by O. Wilde in his play 'On the Importance of Being Earnest' in which Lady Bracknell dismisses the possibility of allowing her daughter to marry into a cloak-room, and form an alliance with a parcel. In Jack Worthing's answer to Lady Bracknell's demand to produce at any rate one parent, of either sex a sentence very similar to Bierwisch's This suitcase is Bill's father might have legitimately occurred. The discussion of a selectional relation between two positions in a sentence (e.g. the position of a Verb and that of the immediately preceding or following Noun), suggesting that a lexical item such as frighten permits only an Abstract Subject and Animate Object, obviously disregards such authors of deviant strings of English words as W. Shakespeare (cf. Macbeth does murder sleep - the innocent/ Sleep that knits up the ravelle'd sleeve of care etc. Macbeth, Act II, Scene 1).

In other words, the scheme for semantic interpretation of words on the basis of selectional rules that was proposed so far in the above mentioned studies does not permit us to state the actual processes at work in the generation of meaningful sentences. It seems to be quite evident that subcategorization and selectional rules formulated on the

basis of combinations of words already petrified in dictionaries can be violated without leading necessarily to deviant strings of words. To incorporate syntactic properties in the representation of word meanings (Bierwisch 1970: 177) seems to be historically predetermined by the approach to semantics from the domain of syntax. It may prove more viable to put the horse before the cart and to recognize a certain independence of lexical invariants on syntactic patterns. A kind of relative independence of lexical items and a certain degree of freedom allowing their occurrence in novel combinations may account for the growth of polysemanticity in words to meet the needs of the increasing complexity of messages accompanying the economic, social and cultural progress of society. It is commonly held that specification of meaning is dependent on context. In other words novel combinations of lexical items give rise to new specific meanings on the basis of their invariant general meanings and their relation to other ones within the given sentence structure (or discourse structure).

Summarizing, we seem to be led to the conclusion that a set of invariant lexical items together with a set of dynamic semantic rules governing the evocation of specific meanings on the basis of an interaction of the lexical item in question and its immediate counterpart (or counterparts) in a given structure are components of an adequately dynamic semantic theory. If this proposal is a correct one, then the lexical rule is not 'part of grammar' (Chomsky 1965:112), nor is it true that 'a semantic theory must: (i) make reference to the syntactic theory in a precise way; (ii) systematically represent the meaning of single words...' in this order.

It is proposed that the main components for a model of a semantic theory powerful enough to account for the process of metaphorical invention are (1) an inventory of semantic items (words and morphemes) described in terms of a hierarchy of relevant (criterial) and irrelevant (non-criterial) semantic features, and (2) a set of semantic compatibility rules based on the relative power of syntactic positions and allowing for the suppression and/or reinforcement of semantic components.

SEMANTIC INVARIANTS

That a language is a system of signs is generally accepted as a fundamental proposition. But the old tradition has it that a sign is a sign for something, that an expression points to something concrete outside the sign itself. This conception, which was proved

linguistically untenable by Hjelmslev (1943) is still the tacitly assumed background of many recent semantic theories. The extreme limitations and obvious inadequacies of some of the suggested semantic theories failing to account for the greater part of semantic competence, leads us to abandon any attempts to base a semantic theory on old traditions, and to introduce a purely linguistic concept of content as a pivotal notion. Expression and content necessarily presuppose each other. There can be no content without an expression and no expression without content. If we take this into consideration, we have to distinguish between purely linguistic content (that can be defined internally on the basis of linguistic oppositions) and extra-linguistic connotations (imposed on the meaning of words by the speakers' knowledge and concepts of the outside world). Thus we can find that the purely linguistic content of the word mother can be represented by such conceptual components as seniority of generation (senior), collaterality (lineal), and sex of relative (female), which coincides with the first definition given in The Concise Oxford Dictionary 'female parent'. All connotations beyond the three relevant semantic features mentioned above are positional, irrelevant features resulting from context or situation rather than purely linguistic oppositions. Any semantic markers that could be invented to distinguish between the primary meaning of mother given in the COD as 'female parent' and some secondary meanings defined as 'head of female religious community', 'apparatus for rearing chickens', etc., are bound to be artificial and far from reflecting any mechanism that can be reasonably expected to function in encoding and decoding natural languages. Looking for a word expressing something like 'motherly care' and failing to find it the speaker may use the word 'mother' after modifying its meanings by suppressing the relevant semantic components Senior, Lineal, Female and emphasizing the irrelevant components that can be described as Tenderness, Care etc. When a person familiar not only with the abstract semantic invariants of a given language perceives the chain of words a similar process operates: the semantic components of the words he and mother are juxtaposed and the incompatible ones are suppressed, which may lead to emphasizing irrelevant components which are present as a reflection of the listener's knowledge of the surrounding world.

It should be mentioned in this connection that semantic items are understood as sets of semantic components or distinctive features (without any irrelevant features explicable as contextual or consituational). Each semantic item is defined strictly in terms of structural delimitation vis a vis other semantic items of the same system, a semantic change within the system affects to a certain extent all other related items. This primary, general and

context-free meaning is the basis for all secondary, transferred or contextual meanings. An early example of this approach can be found in R. Jakobson's (1936) Gesamtbedeutung and Spezifische Bedeutung of Russian Cases. At the present state of development of semantic studies a comprehensive all-embracing description of the vocabulary of a natural language is admittedly impossible.

The emphasis upon the common denominator of meaning in each word follows from the assumption that communication is possible only if a one-to-one correspondence between invariants of the planes of content and expression exists and is perceived by language users. Attempts at paradigms have not been too successful so far, but the number of attempts at research in this direction is constantly growing (Bendix 1966) and a workable approximation to a componential description of various domains of general vocabulary is not beyond the methodological equipment of modern linguistics.

If we look at dictionary entries, we usually are able to find identical pieces of information, or, as it is often put, identical semantic components in all contextual or con-situational meanings of a given word. The main reasons that traditional dictionaries are usually not limited to the invariant semantic component of an item, are practical ones. Dictionaries are supposed to help people who are not sufficiently acquainted with adequate usage. That is why each dictionary entry includes not only some indication of the invariant meaning but also of positional variation, usually via the introduction of the most frequently occurring contexts, either in the form of line, of bell, of time or by sentence exemplification the difference goes deep, 6 into 12 goes twice (The Concise Oxford Dictionary entry for go). Katz and Fodor are quite right in saying that these pieces of information 'are intended to indicate that the senses that follow them apply only under the conditions that they specify'. But it should be born in mind that 'the senses that follow' refer to information supplied by the dictionary about the word in a certain context and not to the information conveyed by the word alone. The specified contextual meaning includes both the invariant semantic components and the modification imposed upon the word or morpheme by the application of compatibility rules operating on the given combination of words. The projection rules actually select a rigidly defined subheading from a dictionary entry covering only a certain part of the whole gamut of usage of the given word, but compatibility rules reflect the process of metaphorical invention.

COMPATIBILITY RULES

One of the chief problems with generation of messages is how to match the nearly limitless number of possible purports with the limited number of lexical items that are at the language user's command. Let us imagine that the speaker's purport is something like 'greedy, dirty, sulky, obstinate and annoying person' and that the speaker is unsuccessful at finding a satisfactorily adequate adjective. However, while scanning his inventory of lexical items the speaker may run into a substantive that would fully suit the intended purport - e.g. pig. Subcategorization and selectional rules would prevent him from forming a deviant and semantically incongruous sentence Bill is a pig, unless in accordance with conventions proposed by various authors (Katz and Fodor 1964; Chomsky 1965 etc) he provides the word pig with adequate semantic markers and distinguishers (e.g. Human) or adjusts the selectional features accordingly. Adjustments of this kind will always tend to be nothing more than ad hoc amendments, lacking methodicalness and systematic organization, cf. The famous example of bachelor characterized as 1) noun - Human - Male - who has never married; 2) noun - Human - Male - Young - knight serving under the standard of another knight; 3) noun - Human - who has the first or lowest academic degree; 4) noun - Animal - Male - Young - fur seal when without a mate during the breeding time (Katz and Fodor 1964:500).

However, from experience we know that native speakers do not hesitate to connect any two things - in fact poetry programmatically tries 'to compare two objects, as remote from one another in character as possible, or by any other method put them together in a sudden and striking fashion' (Andre Breton). Messages generated by the speaker are supposedly meaningful and semantically congruous, and the listener is forced to find the intended meaning by discovering the compatible semantic components in the sentence or sentences he received. Or as I. A. Richards puts it 'the reader... will try out various connections, and this experimentation - with the simplest and the most complex, the most obvious and the most recondite collocations alike - is the movement which gives its meaning to all fluid language' (Richards 1966:233).

The question, how the readers (or listeners) proceed while trying out various connections, arises.

My suggestion at this point is that one can explain the procedure of semantic decoding and encoding if two factors are taken into account: 1) the relative power of

syntactic positions and 2) compatibility or otherwise of semantic components of the two words considered.

A connection of two lexical units that is of interest to us is always characterized by subordination. Even in the so called equative sentences one position (in this case the position of subject) corresponds to rheme (the given, topic), i.e. to information already received and accepted as indisputable while the other one (the position of nominal predicate) conveys new information and corresponds to theme (the new, comment). Following the Prague school and several other linguists holding similar views (Firbas 1965; Halliday 1967-8 etc.) we can make use of the deeply rooted distinction between what the speaker is talking about (the thematic foreground, theme, topic) and what he is saying about it (the information focus, rheme, comment). Any incongruity between the semantic components of the lexical item in the stronger position of theme (information already established as a fact) and the corresponding semantic item in the weaker position of rheme (new and so far unassimilated information) is solved in favour of the components in the stronger position. In the example Bill is a pig the subject Bill is in a stronger position than the predicate noun pig. Starting from these facts as given data the user of language applies compatibility rules, the operation of which can be described as follows: 1) The relevant semantic components of the item in the stronger position are compared with the relevant semantic components of its weaker counterpart. 2) If they are compatible, as e.g. Bill (living being) - pig (living being), both are retained as components and used in the interpretation of the whole sentence. If, however, they are incompatible, e.g. Bill (human) - pig (animal), the weaker counterpart is suppressed as a semantic component in the weaker semantic item (pig in this case). This results in the accentuation of some of the irrelevant semantic components, e.g. 'greediness, dirty habits' etc.

The first step in the suggested model can be described as scanning the hierarchy of semantic components of the subordinate word and comparing them successively with those of its overruling counterpart to decide which incompatible subordinate semantic components are to be suppressed.

The process and the results of suppression of subordinate incompatible components and reinforcement of compatible ones can be illustrated by the following few examples. They are arranged in tabular form together with traditional definitions of meaning

borrowed from traditional entries of The Concise Oxford Dictionary. I do not pretend to solve the intricate problems of componential semantic analysis of the words used in my examples.

words occurring in the stronger position	relevant ----- irrelevant semantic components	word occurring in the weaker position	relevant ----- irrelevant semantic components	contextual specification
dog	quadruped of many breeds wild and domesticated ----- animal body	lie(s)	position (verb) have one's body in more or less horizontal position along ground or surface	have one's body in more or less horizontal position along ground or surface
land (-to the east)	solid part of earth surface ----- spread horizontally duration		be situated	
road	line of communication between places ----- spread in one dimension (linear)		position along ground or surface	lead, through, by, along...
interest	concern, advantage, profit (abstract noun) ----- duration location		----- duration	exist, to be found

FIGURE I

In Figure 1 the semantic components of dog are compatible with those of the verb and consequently participate in the contextual specification of the meaning of the verb lie - no suppression of subordinate components takes place. In the combination of words land lies (to the east) relevant semantic components described as 'solid part of earth surface' is clearly incompatible with part of the semantic load of the subordinate lexical item lie (have one's body in...position), and is suppressed. On the other hand the components 'spread horizontally - duration' and 'in more or less horizontal position' are compatible and result in the contextual interpretation 'be situated'. Similar procedure operates in the case of the next combination (road lies), and in addition to that the components 'spread in one dimension - linear' result in the contextual specification retaining some notion of linearity: 'lead through, by, along'. In the last example (interest lies) the semantic components of the word lie described in COD as 'have one's body in more or less horizontal position along ground or surface' are suppressed as incompatible with any abstract noun, and the only component compatible with abstract notions - 'duration' - is reinforced and gives rise to the contextual interpretation: 'exist'.

word in the weaker position	relevant ----- irrelevant semantic components:	words occurring in the stronger position	relevant ----- irrelevant semantic components	contextual specification
soft	quality (adjective) not resisting (one that can easily be contended or counter-poised -----	coal	mineral ----- subject to pressure	yielding to pressure
		skin	flexible continuous covering of human or other animal body ----- open to touching or stroking	of smooth surface not rough or coarse
		light	the natural agent ----- that stimulates the sense of sight	not crude or brilliant or dazzling
		voice	sound uttered by the mouth ----- stimulating the sense of hearing	not strident or loud
		claret	kinds of red French wine ----- appealing to taste	not astringent or sour or bitter
		summer (winter)	second (fourth) season of the year ----- hot (cold) weather	mellow, mild, balmy, not noticeably hot or cold
		drink	liquid swallowed or absorbed ----- intoxication	not intoxicating (non-alcoholic)
		answer	reply, thing done in return	gentle, quiet, esp. a good-tempered one to abuse or accusation

FIGURE 2

morpheme in the weaker position	relevant ----- irrelevant semantic components	morphemes occurring in the stronger position	relevant ----- irrelevant semantic components	contextual specification
re-	once more, another time -----	-build	construct ----- can be destroyed and restored	once more, again; with return to previous state
		-pay	give (a person) what is due ----- mutuality	in return
		-bel	fight ----- against some one	in opposition to some one
		-main	abide, stay duration -----	behind, (after dealing with the rest)
		-pudiate	discharge obligation -----	off, away
		-double	increase twofold ----- instantaneous- ness	frequentativeness (intensity)
		-proof (=-prove)	test qualities ----- evaluation (posi- tive vs. negative)	negation

FIGURE 3

Several more things could be said about the operation of semantic compatibility rules in the above mentioned examples, but in this paper I wish to limit myself to the addition of two more sets of examples. Notice in Figure 2 that the irrelevant components of some of the substantives (such as 'stimulating the sense of sight' or 'hearing', 'appealing to taste') correspond to a certain degree to Weinreich's transfer features (Weinreich 1966: 429). The only difference is that according to the model suggested here, no actual transfer is presupposed (synchronically - it may be different with diachrony).

Turning now to Figure 3 we can see that even if the elements have a different status, the status of morphemes instead of words, similar rules operate between them suppressing and reinforcing semantic components along much the same lines as in the previous two sets of examples.

SOME CONCLUDING REMARKS

I will close by commenting briefly on some important matters which I have not yet touched. First, it perhaps should be pointed out at this stage that compatibility rules cannot account for all shifts of meaning, especially those caused in the early stages of each communicative act when selection of words pointing to the particular purport in the mind of the speaker takes place. Different types of rules are needed to cover those processes (including metonymy etc.).

Secondly, while the analysis given above allows in principle for contextual specifications of lexical items, it cannot, however, account for processes leading to the acceptance of some of the novel combinations as usual ones while others remain accidental and do not leave the domain of poetry.

One of the principle motivations for paying attention to the particular field of semantic study was the obvious and sometimes programmatic inadequacy of semantic models offered so far. I did not wish to do more here than indicate some problems and stress the necessity of focusing the attention of modern semantics to the possibility of a dynamic model operating on the basis of general semantic items described by means of a hierarchy of semantic components and a set of compatibility rules suppressing incongruent and reinforcing congruent semantic components of lexical (or morphemic) elements in the weaker position. I wish to stress the fact that there are many unanswered questions that might very well affect the formulation of even those parts of this model that seem

reasonably well established. On the other hand, however, there may be reasons to believe that the dynamic model suggested in this paper points in a viable direction worthy of further development.

REFERENCES

- Bendix, Edward Herman. 1966. Componential Analysis of General Vocabulary, The Semantic Structure of a Set of Verbs in English, Hindi, and Japanese. The Hague: Mouton.
- Bickerton, Derek. 1969. Prolegomena to a Linguistic Theory of Metaphor. *Foundations of Language* 5.34-52.
- Bierwisch, Manfred. 1969. On Certain Problems of Semantic Representations. *Foundations of Language* 5.153-184.
- 1970. Semantics, *New Horizons in Linguistics*. ed. J. Lons. Penguin Books.
- Bolinger, Dwight. 1965. The Atomization of Meaning. *Language* 41. 555-73.
- Carnap, R. 1948. Introduction to Semantics. Cambridge (Mass.): Harvard Univ. Press.
- Chafe, Wallace L. 1967. Language as Symbolization. *Language* 43. 57-91.
- Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge, Mass.: MIT Press.
- Dahl, Osten. 1969. Topic and Comment: A Study in Russian and General Transformational Grammar. Goteborg: Acta Universitatis Gothoburgensis.
- Deese, J. 1969. Conceptual Categories in the Study of Content. In Gerbner G. (Ed.) *Communication and Content*. New York: Wiley.
- Fodor, J. A. & Katz, J. J. eds. 1964. The Structure of Language. *Readings in the Philosophy of Language*. Englewood Cliffs: Prentice-Hall.
- Goodenough, W. H. 1956. Componential Analysis and the Study of Meaning. *Language* 32: 195-216.
- Guiraud, P. 1955. Le Semantique. Paris: Presses Universitaires.
- Halliday, M. A. K. 1967-1968. Notes on Transitivity and Theme in English, Part I-III. *Journal of Linguistics* 3:37-81; 199-244; 4:179-215.
- Hjelmslev, L. 1943. Omkring Sprogteoriens Grundlaegelse. Copenhagen.
- Isacenko, A. V. 1972 Figurative Meaning, Derivation and Semantic Features. *The Slavic Word*. The Hague: Mouton.
- Jakobson, Roman. 1936. Beitrag Zur Allgemeinen Kasuslehre (Gesamtbedeutungen der russischen Kasus). Chicago University.

- Katz, Jerrold, J. & Fodor, Jerry, A. 1963. The Structure of a Semantic Theory. *Language* 39:170-210.
- Katz, J. J. and Fodor, J. A. 1964. The Structure of a Semantic Theory. *The Structure of Language*. Englewood Cliffs: Prentice-Hall.
- Katz, J. J. and Postal, P.M. 1964. An Integrated Theory of Linguistic Descriptions. Cambridge, Mass.: The M.I. T. Press Research Monographs, No. 26.
- Lakoff, George. 1969. On Generative Semantics. London: Cambridge University Press.
- Lorge, I. 1949. The English Semantic Count. New York Institute of Psychological Research Teachers College, Columbia University Press, New York.
- Lyons, J. 1963. Structural Semantics. Oxford: Philological Society.
- Nida, Eugene A. 1951. A System for the Description of Semantic Elements. *Word* 7:1-14.
- Ogden, C. K., Richards I. A. 1953. The Meaning of Meaning. London: Routledge & Kegan Paul.
- Paul, H. 1886. Principien der Sprachgeschichte. Halle: M. Niemeyer.
- Read, Allen Walker. 1948. An Account of the Word 'Semantics'. *Word* Vol. 4, No. 2: 78-97.
- Richards, I. A. 1966. The Command of Metaphor. *Introductory Readings on Language*, ed. by W. A. Anderson and N. C. Stageberg. Holt, Rinehart and Winston, 228-240.
- Schaff, Adam. 1960. Wstep do semantyki. Warszawa: Panstwowe wydawnictwo naukowe.
- Searle, J. B. (ed.) 1971. Philosophy of Language. *Oxford Readings in Philosophy*. Oxford University Press.
- Southworth, Franklin C. 1967. A Model of Semantic Structure. *Language* 43. 342-61.
- Ullmann, S. 1957. The Principles of Semantics. 2nd edition New York: Philosophical Library.
- Weinreich, U. 1962. Lexicographic Definition in Descriptive Semantics. Bloomington: Indiana University Research Center in Anthropology, Folklore, and Linguistics, Publication 21.
- 1963. On the Semantic Structure of Language. Cambridge, Mass.: M.I.T. Press.
 - 1966. Explorations in Semantic Theory. The Hague: Mouton.
- Zipf, G. K. 1945. The Meaning-Frequency Relationship of Words. *The Journal of General Psychology*, XXXIII, p. 251-264; p. 255.
- 1949. Human Behavior and the Principle of Least Effort. Addison-Wesley Publishing Co., Inc., Cambridge, Mass.